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Person-centred care in the physiotherapeutic management of long-term conditions: a critical review of components, barriers and facilitators

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Abstract

***Background*:** In the management of long-term conditions (LTCs), the role of physiotherapy and the construct of person-centred care (PCC) is evolving. Though discussed thoroughly in some disciplines, theorising about PCC is embryonic in physiotherapy literature, with evidence suggesting ambiguity in its conceptualisation and application.

Aims: To critically review evidence for barriers to, and facilitators of, PCC in adults living with LTCs within a physiotherapy context and identify components and outcomes of PCC in practice.

Method: A systematic electronic search strategy to identify quantitative, qualitative and mixed method studies which collected data relating conceptually to PCC and included physiotherapists working with adults (>19 years) living with one or more LTCs in any setting.

Findings: Four quantitative, three qualitative and one mixed methods article, representing six studies, were selected for critique and synthesis. Outcomes identified by the authors included perceived self-management and 'patient' centredness, self-efficacy (assessed using Six-Item Chronic Disease Self-Efficacy Scale, Pain Self-Efficacy Questionnaire) and quality of life (assessed using Quality of Life Analogue Scale, Short Form-36). Components of PCC were identified as self-management, on-going care, decision-making, individualisation, information-sharing and goal-setting. Evidence suggests barriers and facilitators may occur at the level of the stakeholder within processes, outcomes and contexts of care delivery.

***Conclusions*:** There is limited and mixed quality of evidence in relation to aspects of PCC in physiotherapy practice for management of LTCs. This review synthesises concepts described in physiotherapy literature in a model which is contrasted with others to trigger further discussion.

Implications:

1) There is a need to study physiotherapists' awareness of the complexity of PCC in practice.
2) Quality of evidence is mixed, highlighting a need for further exploration of PCC within physiotherapy contexts.
3) Evidence suggests PCC can be better delivered by physiotherapists when addressing barriers and enhancing facilitators of PCC.

Keywords: Person-centred care, patient-centred care, long term conditions, physiotherapy, barriers, facilitators

Introduction

Person-centred care (PCC) emphasises equal partnerships between people in planning, developing and accessing care to ensure it meets the person's needs (De Silva, 2014). Policy drivers and an overwhelming amount of evidence supporting a person-centred approach have placed it at the core of healthcare for people living with long term conditions (LTCs) (Institute of Medicine, 2001; Nolte and McKee, 2008; House of Commons, 2014; World Health Organisation, 2016). LTCs, defined as health conditions lasting a year or more and impacting a person's life by requiring ongoing care (House of Commons, 2014; Healthcare Improvement Scotland, n.d.) are currently the leading global cause of mortality and present huge challenges to healthcare (Department of Health 2012; House of Commons, 2014; World Health organisation, 2016). Physiotherapists are increasingly involved in fostering health literacy and self-management of LTCs across primary, secondary and tertiary care (Robinson et al., 2014; Turner et al., 2014; Chartered Society of Physiotherapy, 2017). Although PCC is thought to underpin high quality care (Pinto et al., 2012; Coulter et al., 2015; Chartered Society of Physiotherapy, 2017), it is not always implemented, with negative impacts on outcomes (Fredericks et al., 2015). This supports the need to explore the body of evidence in relation to how PCC is manifested within physiotherapy practice, what gets in the way and how it can be facilitated.

Within the field of physiotherapy, research on PCC is considered embryonic compared to the long history of discourse in medical, nursing and mental health literature, where the terms personalised-, patient-, person-, and client- centred care are used synonymously (Kitson et al., 2013). Unless directly discussing previous research, this article uses the term 'person-centred' to represent the humanistic underpinning values of mutual respect, understanding for persons and individual rights to self-determination (McCormack et al., 2011; McCormack and McCance, 2016). Currently, there is no standardised definition of PCC across disciplines, partially reflecting its complexity. This is problematic for physiotherapists aiming to enact expectations of the UK Chartered Society of Physiotherapy (CSP) that all members should be person-centred (Owen, 2013).

Existing conceptual models show the development of PCC in different contexts and demonstrate ambiguity in relation to the key components of PCC (Mead and Bower, 2000; Hobbs, 2009; Morgan and Yoder, 2012; McCormack and McCance, 2016); four are discussed below.

Early frameworks used the term 'patient-centred' (Mead and Bower, 2000; Hobbs, 2009), with increasing use of 'person-centred care/practice' more recently (Morgan and Yoder, 2012; McCormack and McCance, 2016). Mead and Bower (2000) focus on doctor-patient relationships, while Hobbs (2009) and Morgan and Yoder (2012) explore nursing in acute and post-acute hospital settings. More recently, McCormack and McCance (2016) developed their work from a focus on nursing to healthcare practice. Despite differences in professional context, many similarities in the key ideas are evident within these frameworks, emphasising the interplay between the person providing care and the person receiving it. Characteristics and capabilities of the person providing care are highlighted in relation to their recognition of the "patient-as-person" (Mead and Bower, 2000, p 1089). Repeated emphasis is also placed on the necessity to approach a person's needs holistically, which means including biopsychosocial and spiritual aspects of their experience and respect for their beliefs and values (Mead and Bower, 2000; Morgan and Yoder, 2012; McCormack and McCance, 2016). Enacting this approach is seen to require self-awareness, interpersonal and intrapersonal abilities (Mead and Bower, 2000). McCormack and McCance (2016) develop these concepts further in their model by illustrating prerequisites of the practitioner as 'knowing self,' 'clarity of beliefs and values,' professional competence, commitment, as well as developed interpersonal skills. The ability of the practitioner to bring these capabilities together in a caring or

sympathetic presence is highlighted by both Hobbs (2009) and McCormack and McCance (2016), and is reflected in empathy, congruence, and positive regard. 'Rule of orientation' defined as, 'the ability to determine when, and how to deviate from the established norms and standards when the patient situation dictates,' (Hobbs, 2009, p 55) was considered a critical factor in a patient's experience of PCC by Hobbs (2009). This is important in enabling a person to balance the values of patients and organisation.

These characteristics and priorities of the person providing care are described as influencing engagement and relationship - described by different writers as 'therapeutic alliance' (Mead and Bower, 2000), 'therapeutic engagement' (Hobbs, 2009), and 'engagement' (McCormack and McCance, 2016). Expansion of these terms includes the importance of respect, sharing power and responsibility, common understanding of goals, shared decision making, individualising and customising interventions, and supporting autonomy and empowerment (Mead and Bower, 2000; Hobbs, 2009; Morgan and Yoder, 2012; McCormack and McCance, 2016).

Outcomes of PCC are conceptualised somewhat differently between frameworks. Mead and Bower (2000) emphasise that the person receiving care should perceive interventions and goals to be relevant, agreed and effective, while Hobbs (2009) prioritises perceptions that needs are met and suffering is lessened. These may all be reflected in 'satisfaction with care,' key outcomes for Morgan and Yoder (2012) and McCormack and McCance (2016). Interestingly, McCormack and McCance (2016) include a more positive focus on 'feeling of wellbeing' which goes beyond the experience of illness and related interventions and has resonance for the context of people living with long-term conditions.

Later frameworks consider organisational culture and physical environment. Hobbs (2009) contrasts command-and-control leadership style with shared governance in relation to facilitation of PCC. Morgan and Yoder (2012) consider physical and cultural healthcare environments, emphasising vision and commitment, organisational attitudes and behaviours, and shared governance. They state 'a culture that values respect, empowerment and choice for patients and staff is paramount' (Morgan and Yoder, 2012, p 5). McCormack and McCance (2016) have developed this aspect of their 'Person-Centred Practice Framework' substantially, conceptualising the care environment as including supportive organisational systems, power sharing, potential for innovation and risk taking, the physical environment, appropriate skill mix, effective staff relationships and shared decision-making systems. Compared to the others, this framework is also the only one to address interprofessional skills as a prerequisite for PCC, important in relation to allied health professionals working with people living with long-term conditions. This framework also focuses on care as a whole, rather than on specific contexts or relationships with specific professionals. On initial analysis, the Person-Centred Practice Framework has greatest resonance with contexts of physiotherapy and people living with long-term conditions, however, further clarification of its relevance and how it might be enacted by physiotherapists would be valuable.

Physiotherapy historically developed and gained validation within the field of science largely as a result of its biomedical view of the body and its dissociation of emotion from touch (Nicholls and Gibson, 2010). In contrast, Hobbs (2009, p 55) notes: 'a caring presence generated by the nurse and evident manifestations such as touch, being present, and frequent communication with the patient is paramount if the interaction is to be successful in alleviating vulnerabilities experienced by the patient'. Although there is increasing consideration of biopsychosocial aspects of a person's life, the body is generally considered the starting point in physiotherapy (Nicholls and Gibson, 2010). This is only one aspect of personhood when considering the philosophical roots of PCC. Therefore, it is important to carefully consider how existing models, developed in different contexts, enlighten physiotherapy practice.

There have been some studies of physiotherapy practice that explore concepts evident in models of PCC and suggest conditions that may form barriers to, and facilitators of, PCC. For example, research in stroke

rehabilitation addresses the importance of goal-setting, engagement and self-management, and related barriers and facilitators (MacDonald et al., 2013; Norris and Kilbride, 2014; Plant et al., 2016). Evidence suggests successful goal setting and patient engagement are facilitated by individualisation, effective communication and therapeutic connection and knowledge sharing (MacDonald et al., 2012; Plant et al., 2016), which are concepts evident in the previously discussed frameworks relating to PCC. Norris and Kilbride (2014) evaluated experiences of physiotherapists, mainly in the community and acute care, and found some of the barriers to self-management to be environment, paternalistic views of therapists and their fear of holding less control. Beyond stroke rehabilitation, Schoeb and Burge (2012) conducted a narrative synthesis of eleven qualitative studies investigating how patients and physiotherapists perceive patient participation. Barriers included physiotherapists' and patients' struggles to share power and responsibility, physiotherapists' struggles to define and apply key concepts of PCC, lack of physiotherapist communication skills and lack of patients' knowledge about what is expected of them. When language used by physiotherapists was evaluated, it was evident physiotherapists engaged in a therapeutic relationship from within a biomedical paradigm, addressing patient's functions and clinical outcomes but were reluctant to engage in discussions of emotions and self-evaluations (Josephson et al., 2015). These findings highlight fundamental challenges to establishing therapeutic engagement / alliance / relationship, viewed as key in several PCC frameworks, with impacts on treatment outcomes like pain, disability, and patient satisfaction (Mead and Bower, 2000; Hobbs, 2009).

Physiotherapy education strives to include a focus on the necessity of active engagement with persons interacting with physiotherapy through goal setting, information exchange, decision-making and exercise training (Schoeb and Burge, 2012; MacDonald et al., 2013). While some of these aims can be considered person-centred in nature, their enactment may or may not be. Understanding current thinking is crucial to development of insight and theory into the way PCC is practiced within physiotherapy (Mudge et al., 2014).

Therefore, this critical review included quantitative and qualitative studies focusing on concepts aligned with PCC in the context of physiotherapists working with people living with LTCs. We aimed to identify components of PCC and analyse the evidence for barriers to, and facilitators of PCC within physiotherapy practice. Finally, we aimed to contrast current thinking with relevant PCC models and suggest areas requiring further discussion, exploration and clarification within physiotherapy.

Method

Design

This critical review included studies using quantitative, qualitative and mixed or multiple methods in order to gather as much evidence as possible. The three-stage framework proposed by Thomas et al. (2004b) and recommended by the Joanna Briggs Institute (2014) was used, whereby qualitative and quantitative data are extracted, analysed separately (Stages 1 and 2), and synthesised (Stage 3) to answer the research question.

Search strategy

An electronic search strategy (Table 1) was completed in June 2016 by one reviewer, applied to: CINAHL, MEDLINE, PsycINFO and Scopus. Keywords relating to common elements and synonyms of LTCs and physiotherapy were gathered from health sciences literature and where possible, medical subject headings (MeSH) were used to identify literature with related concepts or near-synonyms of 'chronic disease' and 'patient centred care'. Selection of key words relating to PCC was challenging due to its complexity and ambiguity. Previous reviews that generated conceptual analysis and theoretical frameworks used words such as patient / person / client / resident centred / focused care (Hobbs, 2009; Morgan and Yoder, 2012). We selected similar synonyms and added further recurring terms from the

theoretical frameworks, including holistic, patient participation, individualised, shared decision making, therapeutic alliance and communication (Mead and Bower, 2000; Hobbs, 2009; Morgan and Yoder, 2012; McCormack and McCance, 2016). Further concepts were included that emerged less often in these frameworks but resonated with physiotherapy and people living with long-term conditions: self-management, collaborative care, team-based care and integrated care. We acknowledge these terms are not exhaustive when considering concepts relating to PCC.

Combinations of key words were used with Boolean operations in each database. Combination #29 was carried out within EBSCO Host and combination #30 was carried out within the Scopus database. Study inclusion and exclusion criteria are summarised in Table 2. Initially, article titles were screened for inclusion criteria and duplicates were removed. Where unclear, article abstracts were screened using a selection template indicating 'yes,' 'no,' or 'undecided;' the latter were read in full.

Quality appraisal

Evaluation of qualitative studies, or components of studies was conducted using The Critical Appraisal Skills Programme (CASP) tool for qualitative studies due to evidence for its descriptive and external validity and reproducibility (Dixon-Woods et al., 2007; Hannes et al., 2010). Based on the appraisal, credibility, transferability, dependability, and confirmability were determined. Quantitative studies, or components of studies utilised The Effective Public Health Practice Project (EPHPP, 2009) Quality Assessment Tool for Quantitative Studies due to evidence of its content validity and test-retest reliability as well as flexibility of application to different study designs (Thomas et al., 2004a). Study design criteria are graded individually as 'strong', 'moderate,' or 'weak' and the paper as a whole receives a global rating. If studies had two or more individual 'weak' ratings, the global rating was considered weak. If there was one rating of 'weak,' the overall rating was 'moderate' and if there were no weak ratings, the study received a global rating of 'strong' (Thomas et al., 2004a).

Data extraction and synthesis

One reviewer extracted and tabulated article information. As proposed by Thomas et al. (2004b), Stage 1 involved thematic content analysis of qualitative findings to group research findings demonstrating similarities within the ideas and concepts. These groups were defined as themes and were further differentiated into components of, barriers to or facilitators of PCC. Components were considered underlying principles of PCC and were identified in studies as the overarching concept or topic of the study if they were congruent with any concepts or dimensions from existing models of PCC (for example, decision making) or if they were novel (for example, self-management). Barriers were defined as factors hindering the delivery of PCC and facilitators as factors fostering PCC, such as therapeutic relationship. Barriers and facilitators were identified in studies if the author discussed them as such within the results of the paper. For stage 2, quantitative findings relating to the research questions were analysed narratively and used to identify themes. In the final stage, the data from both syntheses of quantitative and qualitative findings were combined to address the aims of identifying the components and facilitators of, and barriers to, PCC in physiotherapy with people living with LTCs.

Results

Figure 1 summarises the process of selection from 1831 hits in the databases to eight articles selected for review. Three were qualitative with two of these derived from the same study and participants (Cooper et al., 2008; 2009; Stenner et al., 2015). Four were quantitative, with two based on the same study and participants (MacKay et al., 2012; Peng et al., 2014; Gardner et al., 2015; 2016) and one used mixed-methods (Dufour et al., 2015). Table 3 summarises study characteristics and demonstrates little consistency between research aims. A total of 439 adults living or diagnosed with LTCs who experienced physiotherapy in the hospital or community were included (Table 4) and all studies explored PCC from the

patients' perspectives. More participants were women (63.3%) and most studies included people living with low back pain in Canada, Australia, and the United Kingdom.

Methodological quality

Two qualitative articles demonstrated high quality (Cooper et al., 2008; 2009), one moderate (Dufour et al., 2015), and one low (Stenner et al., 2015), summarised in Table 5. Table 6 presents the results of the component and global methodological ratings of the four quantitative studies and the quantitative component of the mixed methods study.

Components of person-centred care in physiotherapy

None of the studies described exploration or evaluation of PCC or concepts within a PCC framework as their research aim. Three articles evaluated self-management alone (Cooper et al., 2008; 2009; Dufour et al., 2015), two articles evaluated self-management and goal setting (Peng et al., 2014; Gardner et al., 2016), one article focused on goal-setting alone (Gardner et al., 2015) and one article evaluated decision-making (MacKay et al., 2012).

From the three-stage, mixed-methods synthesis, summarised in tables 7-9, six components of PCC within physiotherapy for individuals living with LTCs were identified: self-management, individualisation, decision making, information sharing, goal-setting and ongoing care. Self-management is conceptualised as an enabling process where an individual manages their health conditions on a daily basis (Cooper et al., 2009). Individualisation is getting to know the patient and tailoring programs to suit the individual (Cooper et al., 2008; 2009). Decision-making is engaging the individual to include their preferences in decision-making processes and respecting when they do not want to participate (Stenner et al., 2015). Information-sharing is providing sufficient information at the level of understanding of the individual (Cooper et al., 2009; Stenner et al., 2015). Goal-setting refers to the process of individuals identifying goals important to them (Gardner et al., 2015). Ongoing care is future access to physiotherapy services and may include face-to-face contact or telephone calls to support individuals in self-managing their conditions (Cooper et al., 2009; Dufour et al., 2015).

The combined synthesis from Tables 7 and 8 identified factors as either barriers or facilitators of components of PCC, summarised in Table 10. These were communication, the physiotherapist, the person, the organisation, therapeutic relationship, self-efficacy, goal achievement, group dynamic and comprehensive care. The list was further categorised as 'stakeholders', 'process of care', 'outcomes of care', and 'context of care'. Stakeholders are defined as people or groups with an interest in healthcare decisions (Agency for Healthcare Research and Quality, 2014) and includes person living with the LTC and the physiotherapist. On analysis of findings, the process of communication and individualisation were identified as key influences on outcomes of PCC. Outcomes of interventions or care are the products of the intervention or care delivered (De Silva et al., 2014) and included comprehensive care, goal achievement, self-efficacy, and therapeutic relationship.

Conceptual map synthesising concepts relating to PCC in relation to physiotherapy with people living with LTCs.

The conceptualisation of PCC for people with LTCs was created based on the concepts and inter-relationships found in this critical review. In its physical appearance, we have borrowed elements of visualisation from existing models of PCC to illustrate relationships and facilitate comparison. It is a simplistic conceptualisation of PCC within physiotherapy in its current state. Stakeholders, patient and physiotherapist, have been identified from the research as key players who influence PCC. We have used the word 'patient' for clarity but emphasise this is within the context of person-centredness. Findings suggested level of individualisation and effectiveness of communication influenced outcomes, which, with the components of PCC, showed a reciprocal influence on one another. The conceptual map also suggests

these relationships take place within the wider contexts of care, including the group dynamic and organisation of therapy – some of which may be more specific to physiotherapy than some other health disciplines.

Discussion

This critical review aimed to explore components, facilitators, and barriers of PCC within physiotherapy literature in order to prompt further discussion. Although the selected studies did not explicitly aim to explore these concepts, they did address concepts of PCC identified in pre-existing models, enabling synthesis of current thinking internationally. We acknowledge the complexity of designing a search strategy around a debated and multifaceted phenomenon means it is unlikely that all relevant literature has been uncovered, however, we feel this critical review represents a valuable step in progressing thinking about how PCC is, and could be, enacted within physiotherapy.

A number of factors were highlighted as influencing physiotherapists' engagement with PCC. Physiotherapists were facilitators of PCC depending on their personality and competence (Cooper et al., 2008). Person-centred care was facilitated by the process of effective communication and individualisation of treatment, assessment, and outcomes by the physiotherapist (Cooper et al., 2008; 2009; Stenner et al., 2015) and hindered by ineffective communication between patients, physiotherapists, and health care providers (Cooper et al., 2008; 2009; Stenner et al., 2015). When the patient had increased understanding and confidence relating to long-term management of their condition, more positive outcomes were demonstrated in relation to components of PCC. Barriers specific to the patient included their time commitments, health problems, cost to health services, perceptions of physiotherapy as being unhelpful, and previous negative experiences of therapy (Cooper et al., 2009; MacKay et al., 2012; Dufour et al., 2015). Outcomes of interventions included comprehensive care, goal-achievement, self-efficacy and a therapeutic relationship. Successfully achieving these outcomes reciprocally facilitated PCC, specifically through enabling the person to self-manage, and to engage in decision-making and goal-setting. Not achieving these outcomes hindered the patient's perception of PCC (Cooper et al., 2009; Dufour et al., 2015; Gardner et al., 2016). PCC is also influenced by the context of care. Findings showed participants highly valued a group dynamic, and felt this facilitated greater self-management by increasing personal motivation and accountability (Dufour et al., 2009). The organisation was described as a barrier due to long waiting times for appointments and short durations of treatment with physiotherapists (Cooper et al., 2008). Many of these factors were identified as key aspects of PCC in existing models, including individualisation through working with patients' beliefs and values, therapeutic relationship and comprehensive care (Morgan and Yoder, 2012; McCormack and McCance, 2016), and decision making and information sharing implicit within engagement and involvement (McCormack and McCance, 2016). Aspects less clear in existing models that emerged as having potential to further clarify PCC for physiotherapists working with people with LTCs were: self-management, self-efficacy, goal achievement and group dynamic. Decision making also emerged in our synthesis as requiring further discussion – consistent with the need for engagement and involvement in care (McCormack and McCance, 2016), it is further discussed as requiring further facilitation in physiotherapy contexts.

Self-management was the most evaluated construct in this review, with evidence that people do not consistently self-manage and physiotherapists could do more to facilitate this (Cooper et al., 2009; MacKay et al., 2012). Additional support is needed through the option of future access to the physiotherapist with whom they have already established a relationship, which was found to increase motivation to self-manage (Cooper et al., 2008; Dufour et al., 2015; Stenner et al., 2015). This is supported by the systematic review of Fredericks et al. (2015) who found PCC for people living with LTCs were only effective where nursing interventions were delivered at multiple time-points. This adds contextual detail to the 'Person Centred Practice Framework' of McCormack and McCance (2016) in relation to the care environment as supportive systems are needed to facilitate continuity of access.

Some patients lacked confidence or understanding to participate in decision-making and preferred the physiotherapist to make the decisions with clear explanations (Cooper et al., 2008; Stenner et al., 2015). There was an appreciation of an individualised approach as some patients felt care was unhelpfully standardised (Cooper et al., 2009). They wanted to be treated as individuals and perceived individualised care as including the physiotherapist listening, understanding and getting to know them as persons (Cooper et al., 2008). Findings suggested people consider information-sharing valuable and reassuring, but the provision of information to be insufficient (Cooper et al., 2008; Stenner et al., 2015). MacDonald et al. (2013) reviewed the literature for barriers and facilitators to engagement in rehabilitation for people who have experienced a stroke and found patients valued paternalism versus independence when making treatment-based decisions on admission because of their views of physiotherapists as 'experts.' Similarly, Cooper et al. (2008) and Stenner et al. (2015) found people appreciated explanations by physiotherapists but were happy for them to make decisions. In addition, patients also felt more comfortable participating in decision-making as their confidence increased. For the physiotherapeutic management for LTCs, research suggests patients value the provision of information and may gradually increase their participation in decision-making (Bainbridge and Harris, 2005; Cooper et al., 2008; MacDonald et al., 2013). The importance of empowerment and evaluating readiness is apparent here. Morgan and Yoder (2012) linked empowerment conceptually through increased autonomy and self-confidence to increased self-determination and participation in decision-making. Effective communication and negotiation, supporting people to obtain information and learn, and supporting choices were all suggested as mechanisms to increase empowerment, worth further exploration in relation to physiotherapy and PCC.

Goal-setting was found to have positive influences on self-efficacy and quality of life in persons living with LTCs (Gardner et al., 2016). This, self-efficacy and goal achievement may be context-specific components and outcomes of PCC particularly relevant in relation to the need for long-term behaviour changes required for a person who is self-managing a LTC. Physiotherapy has a specific remit in relation to optimising self-management (Chartered Society of Physiotherapy, 2017). When considering goal setting, the feeling of capability to achieve a goal is known to be particularly important to success (Bandura, 1997); therefore, self-efficacy may be a link between goal-setting and goal achievement - and empowerment through PCC principles could support this journey. In the physiotherapy literature, goal-setting is seemingly equated to patient- and/or person-centredness. Yet, evidence suggests goals set by physiotherapists are not always aligned with goals set by patients when considering people who have had a stroke, as they relate their goals to life pre-stroke, while the physiotherapist may relate goals to their condition immediately after the stroke (Sugavanam, 2012; Gardner et al., 2015).

The group dynamic emerged as a facilitator of PCC, which may also be a context-specific way of enacting care processes within a specific care environment. It is important to note that group-based interventions may or may not be developed and implemented with an ethos consistent with PCC, and are common within physiotherapy with persons living with LTCs. Complex interpersonal skills are required in negotiating shared-decision making between two people; group interventions increase this complexity greatly.

When considering recommendations from this review, it is important to note that although methods aimed for transparency and rigour, the conclusions are based on a small number of studies. We have acknowledged some limitations in our search strategy and following this critical analysis we would progress the search by including additional concepts related to the enactment of PCC in physiotherapy such as self-management, goal achievement, and group dynamic. Further thinking is also emerging that could elucidate PCC in physiotherapy, such as embodiment, which rejects reductionistic views of the body, health and illness, and aims for a much more holistic view. This widens the viewpoint to the person and their health and wellbeing as they experience and give meaning to both within their wider social,

environmental and cultural contexts (Nicholls and Gibson, 2010). As well as the conceptual challenges in a developing area, it was also challenging to compare and synthesise diverse studies and critical analysis relied on two different appraisal tools. The method for synthesising results can be challenged by the variability of methods and potential for influences of the researcher (Thomas et al., 2004b). Despite these considerations, we feel that this review can provide some useful insights to prompt further discussion in relation to PCC within physiotherapy contexts and roles.

This review highlights people receiving physiotherapy desire PCC but do not always feel it is fostered by physiotherapists, supporting the need for further exploration of its enactment within physiotherapy provision. Mudge et al. (2014) and Hall et al. (2018) also arrived at similar conclusions regarding the current state of physiotherapy practice whereby, physiotherapists are seemingly struggling with the incorporation of PCC principles. Both articles highlight that physiotherapists are challenged with the application of PCC. They are still predominantly functioning from a biomedical paradigm and lack advanced communication skills needed to address complex emotions and to facilitate person-centered goal setting (Mudge et al., 2014; Hall et al., 2018). Overcoming these challenges within physiotherapy practice is critical in order to speak to the person who is at the core of PCC (Mudge et al., 2014; Hall et al., 2018). While the findings of this review suggest congruence with the 'Person-Centred Practice Framework' of McCormack and McCance (2016), application of PCC within decision-making processes, goal-setting, and group interventions warrant further exploration within physiotherapy.

Conclusion

This critical review sought insight into components, barriers and facilitators offering some clarification of PCC for physiotherapists when working with persons living with LTCs. Considering the limitations of the studies, focusing on select aspects of PCC and a small number of studies selected, the review findings demonstrate the importance of clarifying how PCC may be enacted and challenged within different contexts. The current state of evidence is mixed, with some trustworthy qualitative and low-quality quantitative studies. Key components, barriers, and facilitators of PCC were identified and generally support application of insights from other disciplines, enabling tentative recommendations for practice due to the early stage of physiotherapy research in this area. It would be valuable for physiotherapists in all contexts to be self-reflective in the use of language and negotiation of goals, exploring how this may influence the role of the patient in the therapeutic relationship. Exploring the design of service provision may also enlighten us about how the discharge system can impact on patients, with consideration of ongoing relationships to enable ongoing access for advice or reassurance. Further research should explore understanding how to better enact PCC within group interventions and in different contexts, as well as how we can enhance processes like communication and individualisation that lead to person-centered outcomes. The field of physiotherapy is likely to benefit from action-oriented research addressing how we can embrace the biopsychosocial approach in practice and further develop skills for effective engagement with PCC.

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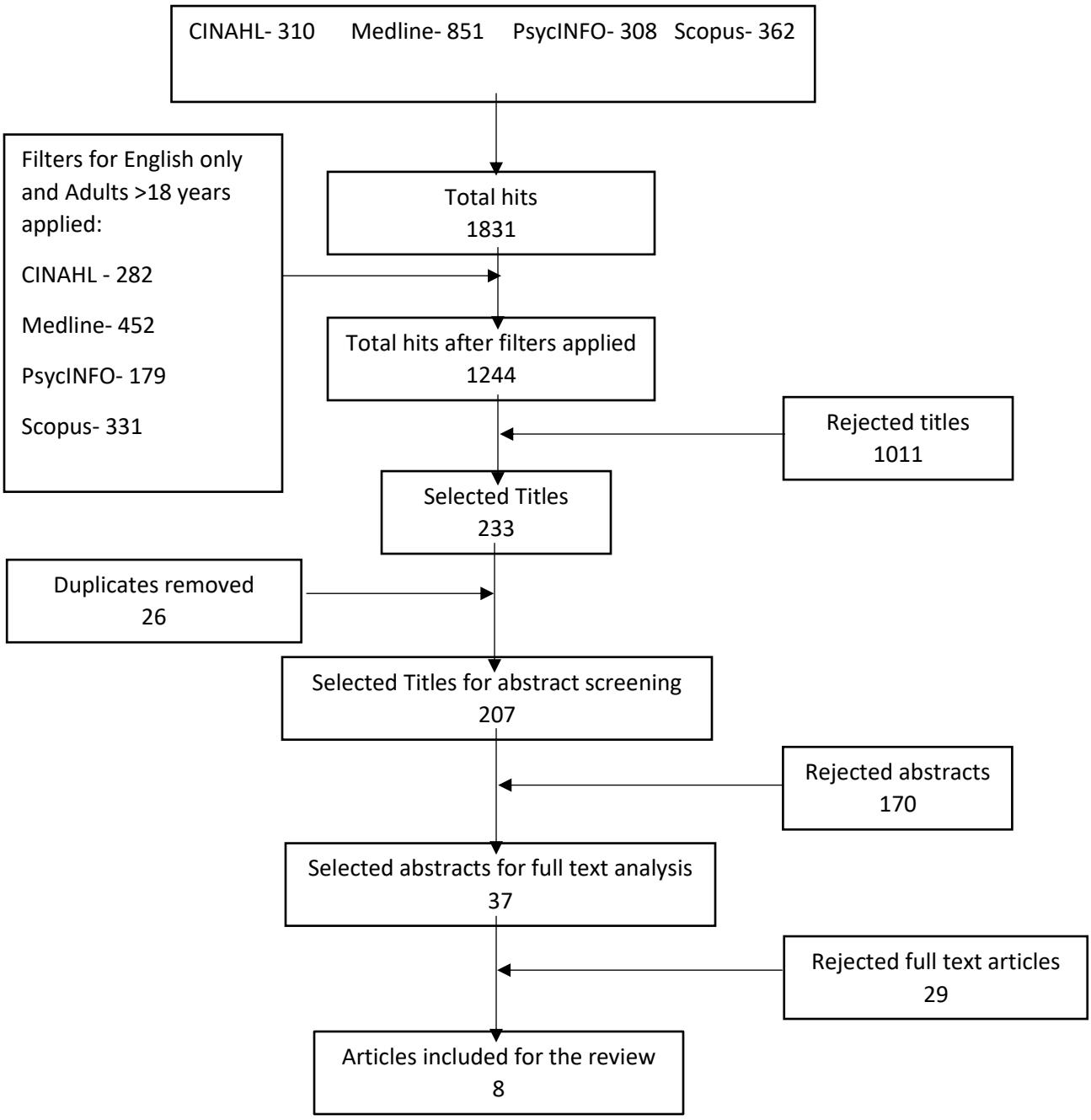

Figure 1. Schematic representation of the study selection process.

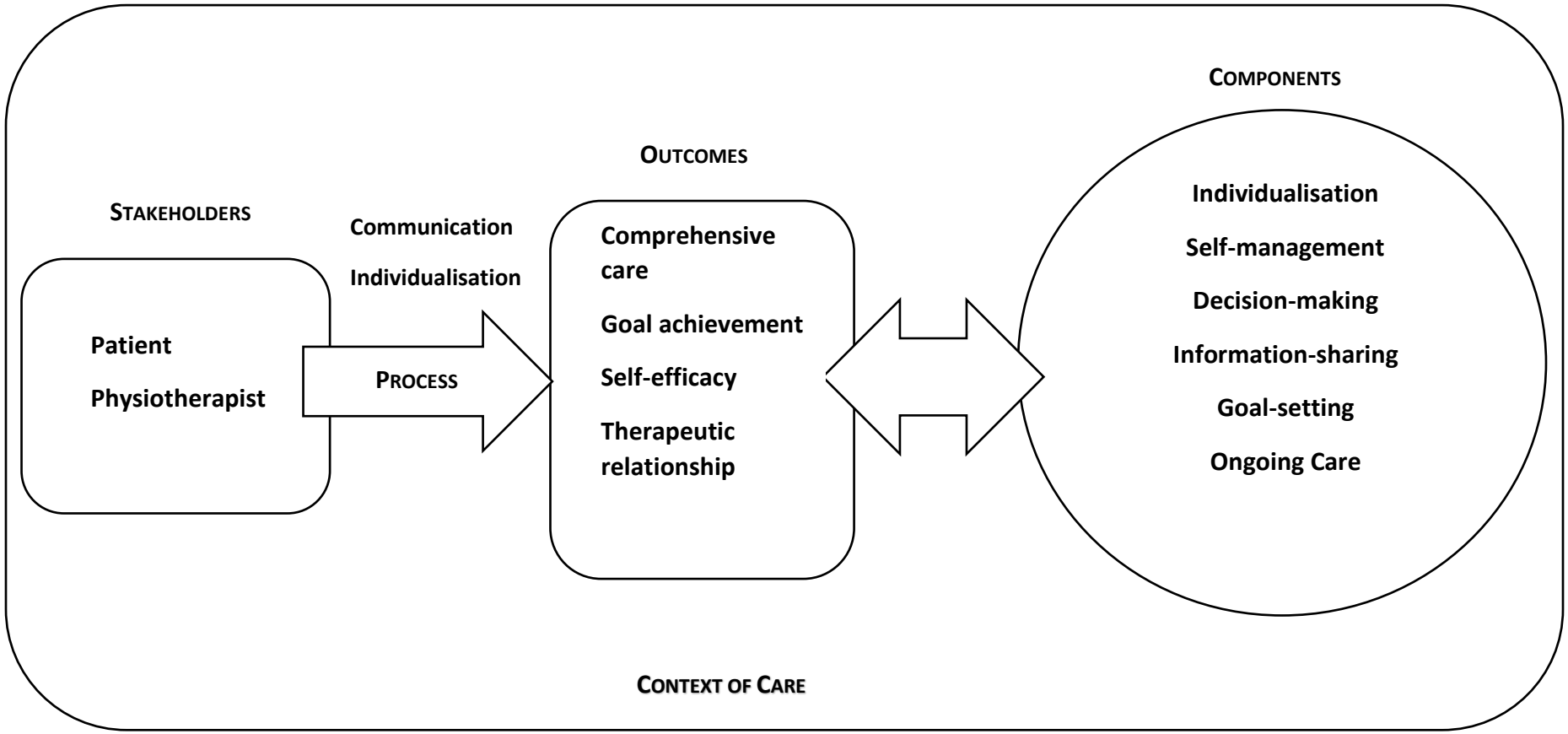

Figure 2. Conceptual map synthesising concepts relating to person-centred care in relation to physiotherapy with people living with long term conditions

Table 1. Search strategy and key words

	Keywords	Combinations
Condition	1. "Long term condition*" 2. "Long term illness*" 3. "Long term disease*" 4. "Chronic condition*" 5. "Chronic illness*" 6. "Chronic disease" [MeSH]	7. #1 OR #2 OR #3 OR #4 OR #5 OR #6
Exposure	8. "Patient centered care" [MeSH] 9. "patient cent*" 10. "Person cent*" 11. "Client cent*" 12. "patient participation" 13. "patient oriented" 14. "Individualised care" 15. "Individualized care" 16. "Shared decision making" 17. "Collaborative care" 18. "self management" 19. "therapeutic alliance" 20. communication 21. "Tailored care" 22. "Team based care" 23. "Integrated care" 24. Holistic	25. #8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16 OR #17 OR #18 OR #19 OR #20 OR#21 OR #22 OR #23 OR #24
Context	25. Physiotherap* 26. "Physical therap*" 27. rehabilitation	28. #25 OR #26 OR #27
Combination		29. #7 AND #25 AND #28 30. #9 OR # 10 AND #25

Table 2. Summary of inclusion and exclusion criteria

	Inclusion Criteria	Exclusion criteria
Population	Men and women Adults >18 Living with long term conditions[1]	Unspecified conditions Acute conditions Adolescents and children <18
Exposure	Physiotherapy in hospitals, community, or primary care	Physiotherapy in palliative care/ hospices
Outcome	Measures of components of person-centred care	Measures of components unrelated to person-centred care
Type of studies	Peer-reviewed All study designs including data collection	Duplicates Non-English Non-methodological design

Note 1. Long-term conditions included: cancer, cardiovascular disease, chronic musculoskeletal conditions, chronic pain, chronic respiratory disease, diabetes, epilepsy, hypertension, mental health, neurological conditions, stroke / transient ischaemic attack (Department of Health 2012; Goodwin et al. 2010)

Table 3. Study characteristics

Author & Year	Aims	Design	Data collection and outcome measures related to PCC	Exposure/ intervention	Limitations
Cooper et al. 2008	To define patient-centredness, in the context of physiotherapy for CLBP[†]	Qualitative Unspecified approach	Purposive sampling Semi-structured interviews with patients	Physiotherapy sessions: mixed (7), group (4), individual (14) – discharged from physiotherapy 6 months ago	Small sample size. Physiotherapists as interviewers
Cooper et al. 2009	To explore CLBP patients' perceptions of self-management following physiotherapy	Qualitative Unspecified approach	Purposive sampling Semi-structured interviews with patients based on LBP history, expectations and satisfaction of physiotherapy, needs and current coping mechanisms.	Physiotherapy sessions: mixed (7), group (4), individual (14) – discharged from physiotherapy 6 months ago	Small sample size. Physiotherapists as interviewers
Dufour et al. 2015	To evaluate a self-management program using standardised self-rated and performance measures pre- and post-intervention	Mixed-methods: quantitative-qualitative Qualitative-unspecified approach Quantitative - Cohort - single group	Convenience sampling Measure of self-efficacy (6-item self-efficacy scale) and QoL[§] (Visual analogue Scale-VAS) before and after intervention. Participant focus groups conducted in the final session of program and narrative reflections	8-week group based program including health coaching, circuit-based exercise, MBSR**	High attrition (n=8), findings do not demonstrate efficacy, and facilitator who conducted health coaching sessions conducted focus groups.

Gardner et al. 2015	To determine the extent of alignment between clinical outcome measures and patient-derived goals for the managing CLBP.	Quantitative Longitudinal Cohort-single group Pilot study	Convenience sampling Goal domains and goal attainment acquired from "Participant Workbook"	Five sessions with two monthly follow ups. Participants given a workbook for goals, progress, issues, barriers, and strategies	Participants continued other CLBP treatments. Participants were non-care seeking, therefore may not represent primary care population. No measures of psychological distress. One researcher conducted the intervention
Gardner et al. 2016	To test the preliminary effectiveness of a patient-led goal setting intervention on improving disability and pain in CLBP.	Quantitative Longitudinal Cohort-single group Pilot study	Convenience sampling Measurement of self-efficacy (PSEQ‡) and QoL (Short Form-36) before the intervention and in 2 follow ups over 2 months.	Patient led intervention with goal setting and education over 2 months.	Small sample size; volunteers, one researcher; cannot establish cause-effect relationship. Participants were non-care seeking, and may not represent primary care population. High attrition rate (67%)
MacKay et al. 2012	To describe patients' recall of APPs*** recommendations, use of self-management strategies, and barriers to self-management six weeks following	Quantitative Cohort-single group pre-and post-intervention Pilot study	Purposive sampling Self-efficacy for managing chronic disease 6-item scale completed at baseline and at 6 week follow up	Non-surgical patients received intervention of education on conservative management strategies and had telephone follow up 6 weeks later.	No control, cannot claim cause-effect between changes and APP recommendation Participants may have seen other health professionals during follow-up. Reliance on patient recall of physiotherapist recommendation.

	orthopaedic consultation and to compare exercise and self-efficacy at baseline and six weeks.				
Peng et al. 2014	To determine if client's sex, age, or number of chronic conditions significantly influenced the self-management (SM) goal-setting behaviour of community physiotherapists	Quantitative- Case control Descriptive Longitudinal retrospective chart review	Purposive sampling Goal characteristics collected: number of goal sets, identification of goal as SM, NSM, or NG, and type of goal set.	Physiotherapy treatment between July 2009-2010	Lacking information on severity of conditions, number of involved physiotherapists, level of their experience, amount of goal-setting training. Reliance on physiotherapist report accuracy.
Stenner et al. 2015	To explore experiences of involvement in treatment decision making, support needed of patients with non-spinal CLBP with exercise in their management plan.	Qualitative Interpretive Phenomenology	Convenience sampling Semi-structured interviews with patients investigating barriers to shared-decision making	Physiotherapy with exercise as part of NSCLBP management	Participants viewed on one occasion. Potential recall bias. Volunteers as sample.

† CLBP=chronic low back pain, *CDSM-Chronic disease and self-management, §QoL- Quality of life, ** MBSR- Mindfulness based stress reduction, ‡PSEQ- Pain Self-Efficacy Questionnaire ***APP- Advanced practice physiotherapist

Table 4. Participant Characteristics

Author & Year	Population of interest	Perspective	Number (N)/ % women	Age (years)	Duration of condition	Nationality	Recruitment location
Cooper et al. 2008, 2009	People living with chronic low back pain (CLBP)	Patient	N=25 20 women, 80%	Range 18-65	CLBP >6 months	Scottish	Primary care, community
Dufour et al. 2015	People living with any of multiple specified LTCs	Patient	N=17 10 women, 59%	Mean age: 63.3 (+/- 11.6)	Mean: 3.2 chronic conditions	Canadian	Primary care
Gardner et al. 2015, 2016	People living with CLBP	Patient	N=20 11 women, 55%	Range:18-65 mean: 42±12.24	CLBP-9.6±9.9 years	Australian	Hospital, community
MacKay et al. 2012	People living with hip/knee arthritis	Patient	N= 73, 49 women, 67%	Range: 19-82 Mean: 58.5	100% with hip/knee arthritis 72% With comorbidities	Canadian	Hospital
Peng et al. 2014	People living with any of multiple specified LTCs	Patients	N= 296 charts 184 women, 62%	Range: 24-97 Median: 78	Mean: 1.64 chronic conditions	Canadian	Community
Stenner et al. 2015	People living with non-spinal CLBP (NSCLBP)	Patients	N=8 4 women 50%	Range: 35-74	Living with NSCLBP: 1-40 years Mean: 21 years	English	Hospital, community

Table 5. Critical Appraisal Skills Programme (CASP) Tool: analysis of qualitative studies

Criterion	Cooper et al. 2008	Cooper et al. 2009	Dufour et al. 2015	Stenner et al. 2015
1.Clear aims	Yes	Yes	Yes	Yes
2. Appropriate methodology	Yes	Yes	Yes	Yes
3. Appropriate design	Yes	Yes	Yes	Yes
4. Appropriate recruitment	Yes	Yes	Yes	Yes
6. Appropriate data collection	Yes	Yes	Yes	Yes
7. Consideration of relationship between researcher and participants	Yes	Yes	No	No
8. Consideration of ethical issues	Yes	Yes	Yes	Yes
9. Rigorous analysis	Yes Audit trail Triangulation via researcher and methods	Yes Audit trail Triangulation via researcher and methods	Yes Audit trail No triangulation Triangulation by researchers	No Coding by one researcher No audit trail No triangulation
10. Clear statement of findings	Yes	Yes	Yes	Yes
11. Value of the research	High	High	Moderate	Low
Trustworthiness				
Credibility	Good	Good	Good	Poor
Transferability	Good	Good	Good	Good
Dependability	Good	Good	Good	Poor
Confirmability	Good	Good	Poor	Poor

Table 6. Methodological assessment of quantitative studies using Effective Practice Public Health Project (EPHPP) Quality Assessment Tool

Article	Dufour et al. 2015	Gardner et al. 2015	Gardner et al. 2016	Peng et al. 2014	MacKay et al. 2012
A. Selection Bias	Moderate	Moderate	Moderate	Moderate	Moderate
B. Study Design	Moderate	Moderate	Moderate	Moderate	Moderate
C. Confounders	Weak	Weak	Weak	Weak	Weak
D. Blinding	Weak	Weak	Weak	Strong	Weak
E. Data Collection Methods	Strong	Weak	Strong	Weak	Strong
F. Withdrawals and Drop-outs	Weak	Moderate	Moderate	N/A	Strong
Single reviewer: Global Rating	WEAK	WEAK	WEAK	WEAK	WEAK

Table 7. Stage 1: Thematic analysis of qualitative findings

Author & Year	Main Findings	Additional findings relating to PCC	Components	Barriers/ Facilitators
Cooper et al. 2008	Model of patient-centredness for physiotherapy has two broad dimensions: physiotherapy experience and the process of physiotherapy. 6 themes emerged: communication, individual care, decision-making, information, the physiotherapist, and organisation of care.	Communication was important and contributes to other themes. Individual care involved getting to know the patient. Physiotherapists should explain and discuss but make decisions. Patients valued physiotherapists' competence and personality. Patients want more information related to diagnosis.	Individual care Decision-making Information-sharing	Communication-providing explanations and information Physiotherapists' competence and personality Organisation's accessibility
Cooper et al. 2009	Participants were described as: self-managing but wanting future access to PT, self-managing but not wanting future access to PT, not self-managing but looking for a cure, and not self-managing but awaiting further investigations. The adoption of self-management strategies was not achieved consistently. Physiotherapists did not facilitate SM.	Physiotherapist-patient therapeutic relationship would enable future access. Formal follow-ups would motivate SM. Patient beliefs of physiotherapy being the same every visit. When goals were unmet, patient did not SM Goal achievement and individualised exercises facilitated SM.	Self-management Ongoing care	Therapeutic relationship Patient perceptions Achievement of goals Individualisation
Dufour et al. 2015	From evaluating CDSM program, 6 themes emerged: Group dynamic, learning versus doing, holism and comprehensive care, self-efficacy and empowerment, previous solutions, and healthcare provider support	Group dynamic provided social support, motivation, and accountability. Patients liked opportunity to discuss other factors like stress. Patients willing to pay for ongoing healthcare provider support.	Self-management Ongoing care	Group dynamic Comprehensive care Self-efficacy Patient's previous experiences

Stenner et al. 2015	4 themes identified from patient perspectives: patients' expectations and patients' needs are not synonymous, information is necessary but often not sufficient, not all decisions need to be shared, and wanting to be treated as an individual.	Gaining understanding of cause of pain was important. Information is reassuring.	Information-sharing Decision making Individualisation Ongoing care	Patient's confidence, understanding, trust in PT

Table 8. Stage 2: Analysis of quantitative findings

Author & Year	Main Findings related to PCC	Components of PCC	Barriers/ Facilitators to PCC components
Dufour et al. 2015	Intervention has non-significant improvements in self-efficacy and QoL*** ($p< 0.05$).	None indicated from quantitative findings.	None specified
Gardner et al. 2015	Participants' goals did not align with common physiotherapy goals.	Goal setting	None specified
Gardner et al. 2016	Patient- led goal setting intervention has significant improvements in self-efficacy and QoL. Goals were set related to physical activity (49.2%), workplace tolerance (14.3%), coping skills (11.1%), relationships (6.4%), and sleep/energy (6.4%)	Goal setting	None specified
MacKay et al. 2012	Improvements in self-efficacy following 6 weeks. Barriers to self management: time, cost, other health problems	Self-management	Time, cost, other health problems
Peng et al. 2014	No significant difference of age, sex, chronic conditions on whether SM or NSM goals were set by physiotherapists and clients or on the type of SM goal set.	Self-management Goal-setting	None specified. Authors indicates identification of barriers and facilitators to goal-setting is complex.

Table 9. Stage 3: Synthesised summary of components of person-centred care

Components of person-centred care	Author & Year
Self-management	Cooper et al. 2009, Dufour et al. 2015, MacKay et al. 2012, Peng et al. 2014
Ongoing care	Cooper et al. 2009, Dufour et al. 2015, Stenner et al. 2015
Decision making	Cooper et al. 2008, Stenner et al. 2015
Individualisation	Cooper et al. 2008, Stenner et al. 2015
Information sharing	Cooper et al. 2008, Stenner et al. 2015
Goal setting	Gardner et al. 2015, Gardner et al. 2016

Table 10. Stage 3: Synthesised summary of barriers and facilitators of person-centred care

Barriers (B) / facilitators (F) of patient-centered care	Author & Year
Stakeholders	
The physiotherapist (F)	Cooper et al. 2008
The person (B, F)	Cooper et al. 2009, MacKay et al. 2012, Stenner et al. 2015
Process	
Communication (B, F)	Cooper et al. 2008
Individualisation (F)	Cooper et al. 2009
Outcomes of intervention/ care	
Comprehensive care (F)	Dufour et al. 2015
Goal achievement (B, F)	Cooper et al. 2009
Self-efficacy (F)	
Therapeutic relationship (F)	Cooper et al. 2009, Stenner et al. 2009
Context of care	
Group dynamic (F)	Dufour et al. 2015
Organisation (B)	Cooper et al. 2008